

Exhibit 300: Capital Asset Summary

Part I: Summary Information And Justification (All Capital Assets)

Section A: Overview & Summary Information

Date Investment First Submitted: 2009-06-30
Date of Last Change to Activities: 2012-07-24
Investment Auto Submission Date: 2012-02-27
Date of Last Investment Detail Update: 2012-06-22
Date of Last Exhibit 300A Update: 2012-06-22
Date of Last Revision: 2012-07-24

Agency: 010 - Department of the Interior **Bureau:** 12 - United States Geological Survey

Investment Part Code: 01

Investment Category: 00 - Agency Investments

1. Name of this Investment: USGS - Hazards - Advanced National Seismic System (ANSS)

2. Unique Investment Identifier (Ull): 010-000000987

Section B: Investment Detail

- 1. Provide a brief summary of the investment, including a brief description of the related benefit to the mission delivery and management support areas, and the primary beneficiary(ies) of the investment. Include an explanation of any dependencies between this investment and other investments.**

The Advanced National Seismic System (ANSS) is the USGS initiative to broadly improve the monitoring and reporting of earthquakes in the U.S. Begun in 2000, ANSS is modernizing and expanding capabilities nationally by establishing an integrated national system of 7100 sensors, providing data to national and regional centers. ANSS provides realtime information on the distribution and intensity of earthquake shaking to emergency responders so that they can rapidly assess the full impact of an earthquake and speed disaster relief to the most heavily affected areas. ANSS also provides engineers with the information they need to improve building design standards and engineering practices to mitigate the impact of earthquakes. ANSS reduces costs through avoided losses. Average annual earthquake losses in the U.S. are estimated to approach \$6 billion per year. Losses are avoided by improved mitigation (a result of more accurate hazard assessments), improved emergency response (a result of more accurate, useful and timely information), and improved awareness and decision-making in both public and private sectors (a result of the availability of accurate, reliable, timely information). As detailed in a report of the National Academy, strongly supporting the full deployment of ANSS, the beneficiaries are diverse: the public benefits from improved earthquake safety and reduced losses; emergency responders, governments at all levels, and lifeline operators benefit from improved situational awareness following a damaging earthquake; and scientists, engineers and architects benefit from improved data

and information about earthquakes and the ground- and structural motions they cause. The 2008 USGS Science Strategy Report calls for "Full deployment of the [ANSS] to improve seismic monitoring of the Nation and the 26 U.S. urban areas at greatest risk from earthquakes." ANSS is also a top priority of the NEHRP Strategic Plan and in the Grand Challenges for Disaster Reduction Implementation Plan of the NSTC Subcommittee for Disaster Reduction. Its full implementation is a top recommendation of the Scientific Earthquake Studies Advisory Committee, the FACA advisory committee to the USGS Director for the Earthquake Hazards Program.

2. How does this investment close in part or in whole any identified performance gap in support of the mission delivery and management support areas? Include an assessment of the program impact if this investment isn't fully funded.

Three gaps are identified, which ANSS would fill if fully implemented: 1. Under the Stafford Act (1977), the USGS Director is delegated the federal responsibility for issuing warnings for earthquakes. Currently, earthquake warnings are not feasible in the U.S. because current technology and monitoring infrastructure are inadequate. ANSS, when fully implemented, will provide earthquake early warnings, where feasible, as a principal product within the ANSS product suite. Equivalent systems are already in place in Japan, Taiwan, Mexico and elsewhere. 2. Insufficient records of earthquake 'strong motion' are available to support the design of buildings, bridges and other structures. This gap was identified in the 1990s, and subsequent reviews indicate that it persists to today. ANSS is designed to collect, process and make available all relevant earthquake records, so that the nations building infrastructure can be adequately designed. The cost-benefit of filling this gap was documented in detail in the ANSS cost-benefit study, published in 2005 (see Resource Documents). 3. Current technology cannot quickly measure the size, extent and tsunami potential of the largest earthquakes. It can take an hour or more for the size of the largest earthquakes to be precisely determined (e.g., the Japan earthquake of March, 2011). To address this gap, it will be necessary to integrate geodetic data into ANSS. Real-time, high-rate GPS can help quickly (within minutes) determine earthquake fault slip, orientation and extent. When complete, tsunami warning will be more accurate, allowing more confident actions to be taken, and minimizing false alarms.

3. Provide a list of this investment's accomplishments in the prior year (PY), including projects or useful components/project segments completed, new functionality added, or operational efficiency achieved.

1. Estimated economic loss and casualty information is now included in ANSS "PAGER" earthquake alerts sent out following significant earthquakes around the world. These earthquake alerts are widely recognized and used by emergency responders, government and aid officials, and the public to understand the scope of the potential disaster and to develop the best response. PAGER rapidly assesses earthquake impacts by estimating the shaking distribution, the number of people and settlements exposed to severe shaking, and the range of possible fatalities and economic losses, and provides color-coded alerts. 2. As of August, 2011, the ANSS ARRA-funded upgrades are nearly complete. For example, the National Earthquake Information Center has been hardened by adding more robust air conditioning, power backup, fire suppression, and increase incoming and outgoing bandwidth. All ANSS "Tier I" data centers have received software upgrades as well.

4. Provide a list of planned accomplishments for current year (CY) and budget year (BY).

At the current funding level, ANSS will be "steady-state" in 2012 and 2013. In the first quarter of FY2012, work will be completed on a new ANSS earthquake catalog. By the end of FY2012, a new metadata server will be completed, and able to provide a synoptic view of all of the system's data acquisition assets (seismic stations worldwide). Performance tracking methods are being developed to enable a quick and regular assessment of system performance at any time, including data and products contributed to the system by partners. Also in FY12, work will be completed to allow ANSS earthquake information and alerts to be distributed through the FEMA "IPAWS" national alerting system. In addition, FY2012 will include a scheduled C&A (recertification) of ANSS IT Security. In 2013 the system will be operated and maintained in its current state.

5. Provide the date of the Charter establishing the required Integrated Program Team (IPT) for this investment. An IPT must always include, but is not limited to: a qualified fully-dedicated IT program manager, a contract specialist, an information technology specialist, a security specialist and a business process owner before OMB will approve this program investment budget. IT Program Manager, Business Process Owner and Contract Specialist must be Government Employees.

2003-07-01

Section C: Summary of Funding (Budget Authority for Capital Assets)

1.

Table I.C.1 Summary of Funding

	PY-1 & Prior	PY 2011	CY 2012	BY 2013
Planning Costs:	\$1.8	\$0.2	\$0.1	\$0.1
DME (Excluding Planning) Costs:	\$42.8	\$0.8	\$0.0	\$0.0
DME (Including Planning) Govt. FTEs:	\$1.3	\$0.2	\$0.1	\$0.1
Sub-Total DME (Including Govt. FTE):	\$45.9	\$1.2	\$0.2	\$0.2
O & M Costs:	\$40.6	\$7.9	\$1.7	\$1.7
O & M Govt. FTEs:	\$0.0	\$0.0	\$6.4	\$6.4
Sub-Total O & M Costs (Including Govt. FTE):	\$40.6	\$7.9	\$8.1	\$8.1
Total Cost (Including Govt. FTE):	\$86.5	\$9.1	\$8.3	\$8.3
Total Govt. FTE costs:	\$1.3	\$0.2	\$6.5	\$6.5
# of FTE rep by costs:	345	46	46	46
Total change from prior year final President's Budget (\$)		\$0.0	\$0.0	
Total change from prior year final President's Budget (%)		0.00%	0.00%	

2. If the funding levels have changed from the FY 2012 President's Budget request for PY or CY, briefly explain those changes:

The President's requested BY2012 budget for ANSS, \$8.26 million, has not changed. This request will eliminate DME for this investment, and the system will revert to steady-state/O&M in 2012.

Section D: Acquisition/Contract Strategy (All Capital Assets)

Table I.D.1 Contracts and Acquisition Strategy

Contract Type	EVM Required	Contracting Agency ID	Procurement Instrument Identifier (PIID)	Indefinite Delivery Vehicle (IDV) Reference ID	IDV Agency ID	Solicitation ID	Ultimate Contract Value (\$M)	Type	PBSA ?	Effective Date	Actual or Expected End Date
Awarded		ING09PC00028									
Awarded		ING10PC00099									
Awarded		ING08PC90061									
Awarded		ING07PC91376									
Awarded		ING11PC00065									

2. If earned value is not required or will not be a contract requirement for any of the contracts or task orders above, explain why:

Earned value management has been required since 2006 for all contracts for DME-related tasks on this Project. Note that many contracts are for steady-state (operational support) work. A significant fraction of ANSS funding is distributed through cooperative agreements with Universities (assistance). They are awarded through "Limited Competition". These delivery vehicles are not included in the contracts table. All ARRA procurements (2009-2011) were developed and implemented according to OMB guidance.

Exhibit 300B: Performance Measurement Report

Section A: General Information

Date of Last Change to Activities: 2012-07-24

Section B: Project Execution Data

Table II.B.1 Projects

Project ID	Project Name	Project Description	Project Start Date	Project Completion Date	Project Lifecycle Cost (\$M)
ANSS-0001	ANSS Planning and Management	Planning and Management (PM) tasks supporting the development, maintenance and operation of the ANSS investment, including committee activities (IPT, advisory and implementation) and technical workshops.			
ANSS-0003	ANSS Development, Modernization and Expansion	Development, Modernization and Expansion (DME) activities of the Advanced National Seismic System, including all product development.			
ANSS-0004	ANSS - ARRA- Development, Modernization and Expansion	Development, Modernization and Expansion (DME) activities of the Advanced National Seismic System, ARRA sensor network upgrades.			

Activity Summary

Roll-up of Information Provided in Lowest Level Child Activities

Project ID	Name	Total Cost of Project Activities	End Point Schedule Variance	End Point Schedule Variance (%)	Cost Variance (\$M)	Cost Variance (%)	Total Planned Cost (\$M)	Count of Activities
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Activity Summary								
Roll-up of Information Provided in Lowest Level Child Activities								
Project ID	Name	Total Cost of Project Activities (\$M)	End Point Schedule Variance (in days)	End Point Schedule Variance (%)	Cost Variance (\$M)	Cost Variance (%)	Total Planned Cost (\$M)	Count of Activities
		(\$M)	(in days)					
ANSS-0001	ANSS Planning and Management							
ANSS-0003	ANSS Development, Modernization and Expansion							
ANSS-0004	ANSS - ARRA- Development, Modernization and Expansion							
Key Deliverables								
Project Name	Activity Name	Description	Planned Completion Date	Projected Completion Date	Actual Completion Date	Duration (in days)	Schedule Variance (in days)	Schedule Variance (%)

NONE

Section C: Operational Data

Table II.C.1 Performance Metrics

Metric Description	Unit of Measure	FEA Performance Measurement Category Mapping	Measurement Condition	Baseline	Target for PY	Actual for PY	Target for CY	Reporting Frequency
Number of metropolitan regions where data-based Shakemap is incorporated into emergency procedures (PART)	number	Mission and Business Results - Services for Citizens	Over target	5.000000	5.000000	5.000000	5.000000	Semi-Annual
Number of subscribers to the USGS Earthquake Notification Service (ENS)	number	Customer Results - Customer Benefit	Over target	150000.000000	150000.000000	235000.000000	185000.000000	Semi-Annual
# Workshops - Earthquake Hazards Program/ANSS Network Operations (cumulative)	number	Process and Activities - Management and Innovation	Over target	6.000000	6.000000	6.000000	6.000000	Semi-Annual
Percent implementation of optimal earthquake and volcano monitoring for moderate to high hazard areas	number	Technology - Information and Data	Over target	28.000000	29.000000	29.000000	29.000000	Semi-Annual
Percent data availability at the archive for the seismic stations of the ANSS Backbone (US network)	number	Technology - Information and Data	Over target	80.000000	85.000000	99.000000	90.000000	Monthly